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These and other advantages and features of the present invention will become more apparent from the following description of an illustrative embodiment of the invention considered together with the drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a block diagram of a communications system which implements an illustrative embodiment of the invention;

FIG. 2 is a block diagram of a first illustrative implementation of the multimedia messaging system of FIG. 1;

FIG. 3 is a block diagram of a second illustrative implementation of the multimedia messaging system of FIG. 1;

FIGS. 4–6 are a functional flow diagram of functions performed by elements of the multimedia messaging system and the terminal of FIG. 1 to effect an Internet/intranet-based call-answer-like message delivery capability within the system of FIG. 1; and

FIG. 7 is an illustration of a subscriber Web home page template of the multimedia messaging system of FIG. 1.

DETAILED DESCRIPTION

FIG. 1 shows a communications system which embodies an illustrative implementation of the invention. It comprises a multimedia messaging system 101, such as the Lucent Intuity® messaging system, which is connected by voice ports to a telephone system 100 and by a data LAN connection to an intranet and/or an Internet 102. Also connected to Internet/intranet 102 is at least one terminal 103, such as a personal computer (PC), equipped with a Web browser 104, such as a Netscape Navigator or a Microsoft Internet Explorer.

Conventionally, a user of terminal 103 communicates over Internet/intranet 102 with other terminals and with servers (not shown). If the user is a subscriber of messaging system 101, the user can also communicate with multimedia system 102 via terminal 103 equipped, for example, with a Lucent Technologies Inc. Intuity® Message Manager, to retrieve messages stored therein for the user. Also conventionally, users of telephone system 100 communicate via telephones (not shown) with multimedia messaging system 101 to deposit messages in and to retrieve messages from mailboxes of system 101. Typically, when a caller is connected to system 101, system 101 answers the call and plays to the caller a greeting—either a system greeting or a personal greeting of the called subscriber—followed by a menu of choices that are available to the caller, including the choice to record a voice message for the subscriber and store it in the subscriber's mailbox.

According to the invention, multimedia messaging system 101 provides a functionally-similar user interface to a user of terminal 103 who accesses system 101 via Internet/intranet 102 as it provides to a telephone caller who accesses system 101 via telephone system 100. System 101 is a stored-program-controlled processor system that includes various data structures and processes. As shown in FIG. 2, the data structures include conventional subscriber mailboxes 200–201 for storing of multimedia messages, and a subscriber directory 203 which stores records of information about subscribers of system 101 that may include their names, telephone numbers, subscriber IDs, personal greetings, call coverage paths, alternate contact numbers, personal calendars, personal photographs, etc. The data structures may also include a dummy mailbox 202 for a generic phantom "Web call answer" subscriber. For connec-

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tion to Internet/intranet 102, system 101 includes an HTTP server daemon process 206. A daemon is a server process that runs in the background, waiting for a service request to be made by an application, and thereafter effects the service. As a part of effecting the service, the daemon may function as a client of another server. In this illustrative example, daemon process 206 is implemented as a conventional HTTP server program, such as a Netscape Communications Server or an NCSA HTTP Server, modified to implement special processing of the "~" meta-character embedded within a URL (as described below) to invoke processing of a Common Gateway Interface (CGI) script 207. Process 206 is interfaced to the data structures and to other processes of system 101 by an application program interface (API) which comprises an API client library 204 and an API service daemon 208. This interface is direct in some cases, and indirect via a send-it process 205 in other cases. In the case of system 101 being the Lucent Intuity system, API 204, 208 is the Lucent Intuity Messaging API (IMAPI).

Alternatively, as shown in FIG. 3, system 101 may have associated with it a separate computer 301 which implements the HTTP server daemon process 206 and the send-it process 205 and acts as an Internet/intranet 102 server on behalf of system 101. API client library 204 resides on computer 301, while API service daemon 288 resides on system 101. Elements 204 and 208 communicate with each other via a conventional TCP/IP socket mechanism 300.

FIGS. 4–6 show the functions performed by multimedia messaging system 101 and entities associated with system 101 in cooperation with browser 104 of terminal 103 to provide a user of terminal 103 with a functionally-similar user interface to system 101 as system 101 provides to telephone callers. When the user of terminal 103 wishes to send a message via system 101, the user sends out a request via browser 104 over Internet/intranet 102 to location "http://<server address>/~<extension>" or to location "http://<server address>/~<name>", at step 400, where <server address>is the Internet/intranet domain name of HTTP server daemon process 206, and <extension> or <name> is the telephone number or surname of the intended message recipient. The sent-out request also includes the return Internet/intranet address (e.g., IP address and socket identification of the requesting browser) of requesting terminal 103. Daemon process 206 receives the request (a URL), at step 402, detects the "~" meta-character and in response it logs into system 101 through API 204, 208, at step 404, either as a special, mailbox-less, type of subscriber or as a conventional subscriber who is the owner of "Web Call Answer" mailbox 202. Conventional processes of system 101 accept the login, at step 406, and daemon process 206 forwards the received request through API 204, 208 to system 101, at step 408, as a directory lookup request to find the subscriber ID that corresponds to the received name or telephone extension. Conventional processes of system 101 receive the request, at step 410, and search subscriber directory 203 for the desired record, at step 412. If system 101 does not find a subscriber ID corresponding to the received name or extension, as determined at step 414, it returns a "no match" indication via API 204, 208 to daemon process 206, at step 416. In response to receipt of the "no match" indication, at step 418, daemon process 206 logs out of system 101, at step 420, and forwards the "no match" message via Internet/intranet 102 to terminal 103, at step 422. At terminal 103, browser 104 receives the message and displays it to the user, at step 424.

Returning to step 414, if a record matching the request is found, system 101 checks if it is a unique match, at step 430.